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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/079,928	02/19/2002	Martin D. Richek	3434-P02437US1	6502

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EXAMINER
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RAMPURIA, SATISH

ART UNIT	PAPER NUMBER
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2124

DATE MAILED: 12/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/079,928	<b>Applicant(s)</b> RICHEK, MARTIN D.	
	<b>Examiner</b> Satish S. Rampuria	<b>Art Unit</b> 2124	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s)      is/are withdrawn from consideration.
- 5) ☐ Claim(s)      is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s)      is/are objected to.
- 8) ☐ Claim(s)      are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on      is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No.     .
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. <u>    </u> |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/19/2002</u> . | 6) <input type="checkbox"/> Other: <u>    </u>  |

***DETAILED ACTION***

1. This action is in response to the application filed on Feb 19, 2002.
2. Claims 1-34 are pending.

***Information Disclosure Statement***

3. An initialed and dated copy of Applicant's IDS form 1449 filed on Feb 19, 2002 is attached to the instant Office action.

***Drawings***

4. The drawings were received on Feb 19, 2002. These drawings are acceptable by the examiner.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claim 1-34 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent No. 6,144,965 to Oliver (hereinafter called Oliver).

**Per claim 1:**

Oliver disclose:

- A computer-implemented method for performing memory management of an object in an object-oriented programming environment using smart pointers (col. 2, lines “a method and apparatus for performing memory management in an object oriented programming environment”), comprising the steps of:
  - providing a base class common to all types of smart pointers (col. 2, lines 7-8 “base class creates a reference counter for smart pointer to the object”);
  - providing at least one smart pointer comprising an object pointer for pointing to an object (col. 4, lines 38-39 “a single reference pointer pointing to he original object”), the smart pointer having a next link for pointing to a subsequent smart pointer on a ring and a previous link for pointing to a previous smart pointer on the ring (col. 5, lines 6-8 “The pointer include a standard pointer to the object, a “next pointer” pointer and a “previous pointer” pointer”); and
  - providing a function for automatically converting a smart pointer to an object of a first class to a smart pointer to an object of a second class, wherein the first class and the second class share the common base class (col. 5, lines 12-22 “second entry... linked to each other”).

**Per claim 2:**

The rejection of claim 1 is incorporated, and further, Oliver disclose:

- providing single member test for determining if a selected smart pointer is the only member of the ring and providing a deletion means for deleting the object if the selected smart pointer is determined to be the only member of the ring (col. 5, lines 23-29 “To delete a pointer... unreferenced... be deleted”).

**Per claims 3, 8, 13, 18, 23, and 26:**

Oliver disclose:

- providing a smart pointer for association with a memory-resident element (col. 5, lines 12-13 “second entry in the pointer list is created for the same object”), the smart pointer including a next pointer (col. 5, lines 15-16 “the second pointer... includes a “next pointer””);
- providing an assignment means for assigning the next pointer to point to the smart pointer thereby creating a linked list comprising the smart pointer (col. 5, lines 17-20 “the “next pointer”... linked to each other”); and
- providing a comparison means for comparing the value of the next pointer to the value of the memory location of the smart pointer in which the selected next pointer is included, whereby a determination can be made if the ring contains more than one smart pointer (col. 5, lines 34-37 “pointer... examined... pointer is the same...one pointer remaining in the list”).

**Per claims 4 and 31:**

The rejection of claim 3 is incorporated, and further, Oliver disclose:

- wherein the method comprises the step of providing a common base to the smart pointer (col. 2, lines 7-8 “base class creates a reference counter for smart pointer to the object”).

**Per claims 5, 15, and 32:**

The rejection of claim 3 is incorporated, and further, Oliver disclose:

- wherein the element is an object in an object-oriented programming environment (col. 3, lines 28-30 “a method... in an object-oriented programming environment”).

**Per claims 6, 16, and 33:**

The rejection of claim 5 is incorporated, and further, Oliver disclose:

- wherein the smart pointer includes an object pointer for pointing to the object (col. 4, lines 42-44 “a copy of the original reference pointer is mad, the new reference pointer also points to the original object and its associated count object”).

**Per claims 7, 10, 17, 20, 25, and 28:**

The rejection of claim 3 is incorporated, and further, Oliver disclose:

- wherein the linked list comprises a ring (see Fig. 5C and related discussion).

**Per claims 9, 19, and 27:**

The rejection of claim 8 is incorporated, and further, Oliver disclose:

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- providing an assignment means for assigning the previous pointer to point to the smart pointer, thereby creating a bi-directional, doubly-linked list (see Fig. 5B and related discussion).

**Per claims 11, 14, 21, 24, and 29:**

The rejection of claim 3 is incorporated, and further, Oliver disclose:

- providing a deletion means for deleting the memory-resident element associated with the smart pointer (col. 5, lines 22-23 “delete a pointer... is deleted”) if the value of the next pointer of the smart pointer is equal to the value of the memory location of the smart pointer in which the next pointer is included (col. 4, lines 55-67 “each time a pointer is deleted... deleted in step 408”).

**Per claims 12, 22, and 30:**

The rejection of claim 3 is incorporated, and further, Oliver disclose:

- wherein the smart pointer includes a first smart pointer, and wherein the method comprises the step of providing an attachment means for attaching a second smart pointer associated with the memory-resident element to the linked list element (col. 5, lines 12-20 “second entry in the pointer list is created for the same object... linked to each other”).

**Per claim 34:**

The rejection of claim 32 is incorporated, and further, Oliver disclose:

- wherein the first smart pointer is associated with a first object of a first class and the second smart pointer is associated with a second object of a second class, and wherein the method comprises the step of providing a conversion means for providing automatic conversion between the first smart pointer and the second smart pointer (col. 5, lines 12-22 “second entry... linked to each other”).

Substantially as claimed.

### *Conclusion*

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Satish S. Rampuria** whose telephone number is (571) 272-3732.

The examiner can normally be reached on **8:30 am to 6:00 pm**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Kakali Chaki** can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Satish S. Rampuria  
Patent Examiner  
Art Unit 2124  
12/27/2004

A handwritten signature in black ink, appearing to read 'TODD INGBERG', with a long, sweeping horizontal line extending to the right.

**TODD INGBERG**  
**PRIMARY EXAMINER**